



## SEQUENCE LISTING

<110> Crowl, Robert M.  
Luk, Daniel C.

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Cys	Gln	Leu	Ser	Cys	Asn	Val	Lys	Ala	Ser	Glu	Ser	Pro	Ser	Ile	Phe
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Trp	Val	Leu	Pro	Asp	Gly	Ser	Ile	Leu	Lys	Ala	Pro	Met	Asp	Asp	Pro
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Met	Glu	Pro	Ser	Asp	Ser	Gly	Leu	Tyr	Gln	Cys	Ile	Ala	Gln	Val	Arg
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Asp	Glu	Met	Asp	Arg	Met	Val	Tyr	Arg	Val	Leu	Val	Gln	Ser	Pro	Ser
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Thr	Gln	Pro	Ala	Glu	Lys	Asp	Thr	Val	Thr	Ile	Gly	Lys	Asn	Pro	Gly
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Glu	Ser	Val	Thr	Leu	Pro	Cys	Asn	Ala	Leu	Ala	Ile	Pro	Glu	Ala	His
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Leu	Ser	Trp	Ile	Leu	Pro	Asn	Arg	Arg	Ile	Ile	Asn	Asp	Leu	Ala	Asn
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Thr	Ser	His	Val	Tyr	Met	Leu	Pro	Asn	Gly	Thr	Leu	Ser	Ile	Pro	Lys
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Val	Gln	Val	Ser	Asp	Ser	Gly	Tyr	Tyr	Arg	Cys	Val	Ala	Val	Asn	Gln

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Gln	Gly	Ala	Asp	His	Phe	Thr	Val	Gly	Ile	Thr	Val	Thr	Lys	Lys	Gly		
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Ser	Gly	Leu	Pro	Ser	Lys	Arg	Gly	Arg	Arg	Pro	Gly	Ala	Lys	Ala	Leu		
		675						680					685				
Ser	Arg	Val	Arg	Glu	Asp	Ile	Val	Glu	Asp	Glu	Gly	Gly	Ser	Gly	Met		
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Gly	Asp	Glu	Glu	Asn	Thr	Ser	Arg	Arg	Leu	Leu	His	Pro	Lys	Asp	Gln		
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Glu	Val	Phe	Leu	Lys	Thr	Lys	Asp	Asp	Ala	Ile	Asn	Gly	Asp	Lys	Lys		
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Ala	Lys	Lys	Gly	Arg	Arg	Lys	Leu	Lys	Leu	Trp	Lys	His	Ser	Glu	Lys		
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Glu	Pro	Glu	Thr	Asn	Val	Ala	Glu	Gly	Arg	Arg	Val	Phe	Glu	Ser	Arg		
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Arg	Arg	Ile	Asn	Met	Ala	Asn	Lys	Gln	Ile	Asn	Pro	Glu	Arg	Trp	Ala		
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Gly	Glu	Glu	Glu	His	Val	Leu	Gly	Thr	Ile	Ser	Ser	Ala	Ser	Met	Gly		
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Glu	Pro	Pro	Leu	Asp	Ala	Val	Ser	Leu	Ala	Glu	Ser	Glu	Pro	Met	Gln		
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Tyr	Phe	Asp	Pro	Asp	Leu	Glu	Thr	Lys	Ser	Gln	Pro	Asp	Glu	Asp	Lys		
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Met	Lys	Glu	Asp	Thr	Phe	Ala	His	Leu	Thr	Pro	Thr	Pro	Thr	Ile	Trp		
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Ile	His	Leu	Val	Lys	Ser	Ser	Leu	Ser	Thr	Gln	Asp	Thr	Leu	Leu	Ile		
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Lys	Lys	Gly	Met	Lys	Glu	Met	Ser	Gln	Thr	Leu	Gln	Gly	Gly	Asn	Met		
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Leu	Glu	Gly	Asp	Pro	Thr	His	Ser	Arg	Ser	Ser	Glu	Ser	Glu	Gly	Gln		
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Glu Ser Lys Ser Ile Thr Leu Pro Asp Ser Thr Leu Gly Ile Met Ser		
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Ser Met Ser Pro Val Lys Lys Pro Ala Glu Thr Val Gly Thr Leu		
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Leu Asp Lys Asp Thr Thr Thr Val Thr Thr Pro Arg Gln Lys Val		
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Ala Pro Ser Ser Thr Met Ser Thr His Pro Ser Arg Arg Arg Pro Asn		
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Gly Arg Arg Arg Leu Arg Pro Asn Lys Phe Arg His Arg His Lys Gln		
1155	1160	1165
Thr Pro Pro Thr Thr Phe Ala Pro Ser Glu Thr Phe Ser Thr Gln Pro		
1170	1175	1180
Thr Gln Ala Pro Asp Ile Lys Ile Ser Ser Gln Val Glu Ser Ser Leu		
1185	1190	1195
Val Pro Thr Ala Trp Val Asp Asn Thr Val Asn Thr Pro Lys Gln Leu		
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Glu Met Glu Lys Asn Ala Glu Pro Thr Ser Lys Gly Thr Pro Arg Arg		
1220	1225	1230
Lys His Gly Lys Arg Pro Asn Lys His Arg Tyr Thr Pro Ser Thr Val		
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Ser Ser Arg Ala Ser Gly Ser Lys Pro Ser Pro Ser Pro Glu Asn Lys		
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His Arg Asn Ile Val Thr Pro Ser Ser Glu Thr Ile Leu Leu Pro Arg		
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Thr Val Ser Leu Lys Thr Glu Gly Pro Tyr Asp Ser Leu Asp Tyr Met		
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Thr Thr Thr Arg Lys Ile Tyr Ser Ser Tyr Pro Lys Val Gln Glu Thr		
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Leu Pro Val Thr Tyr Lys Pro Thr Ser Asp Gly Lys Glu Ile Lys Asp		
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Asp Val Ala Thr Asn Val Asp Lys His Lys Ser Asp Ile Leu Val Thr		
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Gly Glu Ser Ile Thr Asn Ala Ile Pro Thr Ser Arg Ser Leu Val Ser		
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Thr Met Gly Glu Phe Lys Glu Glu Ser Ser Pro Val Gly Phe Pro Gly		
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Thr Pro Thr Trp Asn Pro Ser Arg Thr Ala Gln Pro Gly Arg Leu Gln		
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Thr Asp Ile Pro Val Thr Thr Ser Gly Glu Asn Leu Thr Asp Pro Pro		
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Leu Leu Lys Glu Leu Glu Asp Val Asp Phe Thr Ser Glu Phe Leu Ser		
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Ser Leu Thr Val Ser Thr Pro Phe His Gln Glu Glu Ala Gly Ser Ser		
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Thr Thr Leu Ser Ser Ile Lys Val Glu Val Ala Ser Ser Gln Ala Glu		
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Thr Thr Thr Leu Asp Gln Asp His Leu Glu Thr Thr Val Ala Ile Leu		
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Leu Ser Glu Thr Arg Pro Gln Asn His Thr Pro Thr Ala Ala Arg Met		
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Lys Glu Pro Ala Ser Ser Ser Pro Ser Thr Ile Leu Met Ser Leu Gly		
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Gln Thr Thr Thr Thr Lys Pro Ala Leu Pro Ser Pro Arg Ile Ser Gln		
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Ala Ser Arg Asp Ser Lys Glu Asn Val Phe Leu Asn Tyr Val Gly Asn		

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Pro	Glu	Thr	Glu	Ala	Thr	Pro	Val	Asn	Asn	Glu	Gly	Thr	Gln	His	Met	
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Pro	Ser	Ile	Pro	Ser	Lys	Phe	Thr	Asp	Arg	Arg	Thr	Asp	Gln	Phe	Asn	
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1955					1960					1965						



Ala Met Glu Cys Leu Ala Lys Gly Thr Pro Ala Pro Gln Ile Ser Trp			
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Ile Phe Pro Asp Arg Arg Val Trp Gln Thr Val Ser Pro Val Glu Ser			
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Arg Ile Thr Leu His Glu Asn Arg Thr Leu Ser Ile Lys Glu Ala Ser			
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Met Gln Ser Asp Asp Ser Gly Arg Thr Lys Arg Tyr Val Val Phe			
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Tyr Leu Ala Val Gln Val Pro Tyr Gly Asp Val Val Thr Val Ala Cys			
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Glu Ala Lys Gly Glu Pro Met Pro Lys Val Thr Trp Leu Ser Pro Thr			
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Asn Lys Val Ile Pro Thr Ser Ser Glu Lys Tyr Gln Ile Tyr Gln Asp			
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Lys	Gln	Tyr	His	Asn	Leu	Val	Ser	Ile	Ile	Asn	Gly	Glu	Thr	Leu	Lys	
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